# Air - PS1 Field Data Sheet

## Section I - Administrative Data

| | | |
|---|---|---|
| 1. Sample ID*: | 6. Sampling Date*: | 9. Percent of personnel exposed?* |
| 2. Location: | 7. Sampling Time*: | |
| 3. Country: | 8. Length of Stay*: (Select One) < 2 weeks / < 6 months / < 1 year / > 1 year | |
| 4. Operation: | 10. Exposure Notes* | |
| 5. Collecting Unit*: | | |

## Section II - Field Data

| | | |
|---|---|---|
| 11. Unit ID*: | 13. PS1 Type: (Select One) TO13 / TO9 | 15. Blank? (Yes/No): |
| 12. Media ID*: | 14. Collectors Name* | 16. Invalid Sample? |

| SAMPLER DATA | Start/Pre | End/Post | Average |
|---|---|---|---|
| 17. Date* | | | |
| 18. Time*: | | | |
| 19. Ambient Temperature (oC)*: | | | |
| 20. Ambient Pressure (in Hg)*: | | | |
| 21. H Orifice (in H2O)*: | | | |
| 22. Volume (m3): | | | |

| 23. Reading | 24. Time* | 25. M Gauge* | 26. M Std | 27. Q Std | 28. Qstd Orifice |
|---|---|---|---|---|---|
| Initial | | | | | |
| 6-Hour | | | | | |
| 12-Hour | | | | | |
| 18-Hour | | | | | |
| Mean | | | | | |

| | | | |
|---|---|---|---|
| 29. Sampler Calibration Relationship | Slope (Msc): | Intercept (Bsc): | Correlation (Rsc): |
| 30. Orifice Calibration Relationship | Slope (Moc): | Intercept (Boc): | Correlation (Roc): |

| GEOLOCATION | Decimal Degrees | OR | 33. MGRS* |
|---|---|---|---|
| 31. Latitude*: | | | |
| 32. Longitude*: | | | |

34. Field Notes*:

# PS1 SAMPLER CALIBRATION INSTRUCTIONS

----------SECTION I - ADMINISTRATIVE DATA----------

1. **Sampler ID** – Unique ID of sampler (e.g. serial number or MMCN number)
2. **Location** – Camp or location of calibration
3. Country – Country in which location or camp is located.
4. Operation – Name of operation ongoing in the area of the sample [e.g. Operation Allied Force (OAF), etc] if applicable
5. **Calibration Date** – Date calibration was conducted
6. **Julian Day** – Corresponding year specific Julian day calibration was conducted. A Julian day is the sequential numeric day of the year. The database can be used to calculate the Julian day of the year.
   *Example: 01-Jan-1999 would be Julian day 99001 where "99" is the last digit of the year and "001" is the day of the year.*
   *Example: 31-Dec-2000 would be Julian day 00366 where '00" is the last digit of the year and "366" is the day of the year (leap year).*
7. **Operator** – Name of person conducting the calibration.
8. **Ambient Temperature (Ta) -** Ambient temperature at the time of calibration in °C
9. **Ambient Pressure (Pa) -** Atmospheric pressure at the time of calibration in inches of mercury (in Hg)

*(All orifice calibration data can be obtained from the calibration sheet located with the orifice calibrator)*

10. **Orifice Calibration SN** – The serial number of the calibration orifice
11. Orifice Calibration Date – Date calibration orifice was calibrated to a primary standard.
12. **Slope ($M_{oc}$)** – Slope of Orifice Calibration curve.
13. **Intercept ($B_{oc}$)** – Slope of Orifice Calibration curve.
14. **Correlation Coefficient ($R_{oc}$)** – Slope of Orifice Calibration curve.
15. Calibration Notes – General notes on the calibration

---------- SECTION II – SAMPLER CALIBRATION DATA----------

16. Reading – Calibration reading number predetermined to be (1, 2, 3 4, 5, and 6).
17. Magnehlic Reading - Magnehelic reading from sampler, pre-determined to be *(5, 10,* 15, 20, 25, and 30)
18. **Manometer Reading ($H_{orifice}$) -** Manometer reading from the calibration orifice for each magnehelic flow setting in inches of water
19. **$Q_{std}$ (X-Axis) -** derived from the orifice calibration relationship using the following equation:

$$Q_{std} = \frac{\sqrt{Manometer * \frac{Pa * 25.4}{760} * \frac{298}{Ta + 273}} - B_{oc}}{M_{oc}}$$

Manometer = manometer reading from calibration ofificein inches of water
Pa = Ambient barometric pressure in inches of of mercury (in Hg)
Ta= Ambient temperature in degrees celcius (°C)
Boc = Intercept obtained from the calibration orifice
Moc = Slope obtained from the calibration orifice

20. **$M_{std}$ (Y-Axis) -** Magnehelic reading corrected to standard temperature and pressure using the following equation:

$$M_{std} = \sqrt{Magnehelic * \frac{Pa * 25.4}{760} * \frac{298}{Ta + 273}}$$

Magnehelic = magnehelic reading in inches of water
Pa = Ambient barometric pressure in inches of mercury (in Hg)
Ta= Ambient temperature in degrees celcius (°C)

**<u>Conduct linear regression of Qstd (X-axis) and Mstd (Y-Axis), either by using regression worksheet, calculator or spreadsheet to obtain sampler calibration</u>:**

**Slope (Msc), Intercept (Bsc) and Correlation Coeffecient (Rsc) if *Rsc < 0.98 calibration must be redone.***

21. **$Q'_{std}$ (Derived Flow) -** Standard flow calculated using the following equation:

$$Q'_{std} = \frac{(M_{std} - B_{sc})}{M_{sc}}$$

Mstd = Mstd from previous equation
Bsc = Intercept obtained from the PS1 sampler calibration.
Msc = Slope obtained from the PS1 sampler calibration.

22. **%Deviation** - Percent deviation from $Q'_{std}$ and $Q_{std}$ Orifice

$$\%Deviation = \frac{(Q_{std} - Q'_{std})}{Q'_{std}} * 100$$

**If % deviation is greater than 4% calibration must be redone.**

23. **Slope ($M_{SC}$)** – Sampler calibration slope derived from linear regression
24. **Intercept ($B_{SC}$)** – Sampler calibration intercept derived from linear regression
25. **Correlation ($R_{SC}$)** – Correlation coeff of calibration